Volume 11, Number 4 October 1998

JTSTEB 11(4) 609–840 (1998)

ISSN 0894-9867

Journal of Traumatic Stress

PLENUM PRESS • NEW YORK–LONDON

Journal of Traumatic Stress, Vol. 11, No. 4, 1998

Psychiatric Symptomatology Associated with Contemporary Peacekeeping: An Examination of Post-Mission Functioning Among Peacekeepers in Somalia

Susan M. Orsillo,[1,2] Lizabeth Roemer,[3] Brett T. Litz,[4] Pete Ehlich,[5] and Matthew J. Friedman[6]

Contemporary peacekeepers frequently confront complex stressors including the need to directly enforce peace between warring factions, to deliver humanitarian aid in the midst of political-social devastation, and to balance shifting rules of engagement. As such, it is proposed that participants may be at increased risk for the development of psychiatric distress. The present study examined the types of stressors encountered by 3,461 peacekeepers in Somalia, their current psychiatric functioning as measured by the Brief Symptom Inventory, and the relationship between exposure to various stressors and adjustment. Over one third of participants met criteria for psychiatric caseness. The most commonly reported symptoms included hostility, psychoticism, depression, and paranoid ideation. The best predictors of current functioning were found to be exposure to traditional war-zone-related stressors and general military pride and cohesion. These findings highlight the mental health consequences that service in a peacekeeping mission may have for United States soldiers. Further research is needed to investigate potential mechanisms that could serve as buffers to the stress associated with peacekeeping service.

KEY WORDS: peacekeeping; psychiatric distress; Somalia.

[1]Department of Psychology, Oklahoma State University, 215 North Murray, Stillwater, Oklahoma 74078.
[2]To whom correspondence should be addressed.
[3]University of Massachusetts at Boston, Boston, Massachusetts 02125.
[4]Boston Department of Veterans Affairs Medical Center; Tufts University School of Medicine, Medford, Massachusetts 02155.
[5]Readjustment Counseling Service, Department of Veterans Affairs, San Diego, California 92103.
[6]White River Junction Department of Veterans Affairs Medical Center, White River Junction, New Hampshire; Dartmouth Medical School, Hanover, New Hampshire 03755.

0894-9867/98/1000-0611$15.00/1

Research findings of multiple investigators confirm that exposure to traditional war-zone experiences can be associated with psychiatric distress (e.g., Kardiner & Spiegel, 1947; Kulka et al., 1990). However, with the termination of the Cold War, the nature of military missions has significantly changed such that men and women serving in the armed forces now encounter unique stressors, the psychiatric consequences of which have yet to be established. In contrast to traditional war-zone missions, United States and multinational troops are now participating in multilateral peacekeeping, humanitarian relief, and peace enforcement operations (Henshaw, 1993). On the surface, these missions may seem to involve less risk of exposure to potentially traumatizing events (e.g., being shot at, injured, seeing others hurt or killed) than the traditional war-zone, and therefore may not be expected to result in severe and enduring psychiatric impairment. However, a closer examination of the physical and psychiatric stressors involved in peacekeeping contradicts this assumption.

Some of this misconception about the nature of peacekeeping may stem from earlier research findings. Historically, peacekeeping missions involved soldiers serving as impartial observers and monitors during the negotiation and implementation of a peace process between formerly warring parties. Investigations of the psychiatric impact of this form of peacekeeping duty revealed that individuals in this role cope reasonably well with the demands associated with their responsibilities. The psychiatric sequelae among this class of peacekeepers consist predominantly of difficulties with boredom and isolation (Harris, Rothberg, Segal, & Segal, 1993), frustration with the relatively inactive role they play in the peace process (Mortensen, 1990), or disillusionment about the significance of their service given that their participation does not always result in an easily realized or objectively defined success (Henshaw, 1993).

However, contemporary peacekeeping operations frequently entail more complex, multifaceted duty, including the direct enforcement of peace between hostile or warring factions, or the provision of humanitarian aid in the midst of political and social devastation and civilian threat (Eyre, Segal, & Segal, 1993; Henshaw, 1993; Litz, 1996). In addition, soldiers in this new role may encounter a variety of unique cognitive and emotional stressors, including coping with the unpredictability of their mission, managing shifting rules of engagement, and struggling with conflicting personal and political views of the mission (Lundin & Otto, 1996). Further, the neutrality that these war-zone-trained soldiers must maintain might lead to role-conflict and ambiguity regarding appropriate action in a threatening situation (Litz, 1996). Given the multidimensional demands associated with

contemporary peacekeeping missions, participants may be at increased risk for the development of associated psychiatric distress.

Although the literature on the psychiatric functioning of participants in "hostile" peacekeeping missions is severely limited, there is some suggestion that involvement can be associated with serious psychopathology. Traditionally, the primary psychiatric disorder associated with military-related service has been posttraumatic stress disorder (PTSD). In a previously reported study (Litz, Orsillo, Friedman, Ehlich, and Batres, 1997), the prevalence rate for PTSD among a large cohort of U.S. soldiers who served in the peacekeeping operation in Somalia was approximately 8%.

However, the prevalence of PTSD among troops serving in Somalia is relatively lower than current rates of this disorder among Vietnam veterans (Kulka et al., 1990). It may be that PTSD does not represent the most prevalent psychiatric reaction to peacekeeping duty. Previous studies of combat personnel suggest that other psychiatric disorders such as alcohol abuse or dependence, generalized anxiety disorder, and antisocial personality disorder may develop following exposure to war-zone-related stressors (Kulka et al., 1990). Moreover, war-zone veterans are also at risk for other postwar readjustment problems such as social isolation and hostility (Kulka et al., 1990). Thus, it is likely that contemporary peacekeeping missions, which include exposure to traditional war-zone experiences, as well as the other multidimensional demands discussed above, are associated with a wide range of adjustment difficulties. More information about the nature and consequences of participation in peacekeeping missions is necessary to effectively train peacekeepers, to inform those involved in debriefing troops, and to educate mental health professionals who may provide services to peacekeepers.

The goal of the present study was to provide a description of the types of experiences reported by individuals who served in Somalia during the peacekeeping mission labeled Operation Restore Hope (ORH) and later modified to Operation Continue Hope (OCH), and to assess their overall psychiatric functioning. Specifically, we assessed the frequency with which peacekeepers experienced more traditionally war-zone-related stressors, examined the potentially frustrating and rewarding experiences associated with a humanitarian mission, and evaluated the relative contribution of these factors in predicting postmission psychiatric functioning. Finally, we examined gender and racial differences in outcome. We were particularly interested in examining the outcome of African Americans given the potential conflict they may experience in their humanitarian/combat role in an African country.

Method

Participants and Procedure

Participants were 3,461 active-duty US military personnel who served in Somalia during ORH or OCH. Permission was obtained to survey whole units from five military installations that had deployed troops to Somalia: Fort Drum, New York (73% of sample), Fort Carson, Colorado (16%), Camp Pendleton, California (4%), Fort Lewis, Washington (4%), and Fort Steward, Georgia (3%). Volunteers were made available to our research team by their commanding officers and no information is available regarding soldiers who refused to participate. Participation in the project was not mandatory, and no soldier who attended the testing sessions refused to participate. Thus participants were a convenience sample that was not randomly or strategically selected to represent the population of soldiers who served in Somalia. However, we were able to obtain information regarding the entire population of U.S. military personnel who served in Somalia (United States Total Army Personnel Command Public Affairs Office, 1994), and the demographic characteristics of our sample were comparable to those of the total population (see also Litz et al., 1997).

The average age of participants was 26.02 (SD = 5.85), and on average they had completed 12.71 years of education (SD = 1.37). A majority of the participants were Caucasian (62%), and more than half of the sample members (54%) were engaged or married at the time of the study. Two hundred and twenty five participants were female.

The average amount of time of deployment to Somalia was 14.24 (SD = 5.39) weeks. Although participants were stationed in many parts of the country, the majority of sample members (66%) were primarily based in Mogadishu. A more extensive description of the demographic and military characteristics of the sample can be found in Litz et al. (1997).

Measures

Participants were administered the *Somalia Survey* with other members of their unit under standardized conditions an average of 14.9 (SD = 9.61) weeks after they returned to the United States. The survey consisted of a demographic survey, a 5-item measure of frequency of exposure to war-zone-related stressors adapted from the Combat Exposure Scale (Keane et al., 1989), and the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982).

The BSI is a 53-item self-report symptom measure designed to assess psychological functioning among psychiatric and medical patients as well as individuals not currently identified as "patients" (Derogatis & Spencer, 1982). For the purposes of the current study, participants were asked to rate their distress over the past 30 days. Each item reflects a psychological symptom, and the participant is asked to select the descriptor that best represents how much discomfort that symptom has caused them ranging from 0 "not at all" to 4 "extremely". The BSI measures nine primary symptom dimensions: Somatization which assesses physical complaints such as cardiovascular symptoms and muscle pain; Obsessive-Compulsive which reflects symptoms of obsessive-compulsive disorder; Interpersonal Sensitivity which represents feelings of personal inadequacy, inferiority and social discomfort; Depression which is composed of symptoms such as dysphoric mood and hopelessness reflecting clinical depression; Anxiety which reflects signs and symptoms of nervousness and terror; Hostility which is comprised of thoughts, emotions and behaviors associated with anger; Phobic Anxiety which reflects fear in reaction to specific objects or situations; Paranoid Ideation which taps into paranoid behavior reflecting projective thought, hostility, and suspiciousness; and Psychoticism which reflects a continuum ranging from interpersonal withdrawal and alienation to psychosis. Three global indices of psychological distress can also be derived from the BSI. In the current study we used the Global Severity Index (GSI) which is the most sensitive of the three.

In order to assess the positive and negative experiences of individuals serving in the peacekeeping mission in Somalia, a 30-item subscale of potentially rewarding (e.g., bringing food to starving people, developing relationships with other soldiers), and frustrating (e.g., having to exercise restraint in dangerous areas, lack of privacy) aspects of the peacemaking mission was rationally generated by a panel of professionals with clinical and research experience in the area of war-zone related exposure from the National Center for PTSD and the Readjustment Counseling Service of the Department of Veterans Affairs. The final content also included material derived from preliminary interviews with individuals who served in Somalia (conducted by P.E.) and media coverage of the events as they were unfolding. A 5-point Likert scale was used for participant ratings of the degree of impact (either positive or negative) of each item.

The items from this scale previously were rationally categorized into different subscales in an attempt to determine the relative importance of a variety of positive and negative experiences in predicting the development of PTSD (Litz et al., 1997). In the present study, we used an empirical approach to the development of subscales in an attempt to further refine our measurement of the constructs of interest. A principal components

Table 1. Items and Factor Loadings of the Somalia Experiences Survey

Item	Factor Loading
Factor 1: Frustrations with Somalis and Somalia	
Things being stolen or theft attempts by Somalis	.697
The looting of food supplies	.691
Having stones thrown at you	.690
Cultural differences between you and the Somalis	.660
Witnessing clan warfare	.659
Sense of not being appreciated by the Somalis	.650
Having to endure the climate	.548
The danger of contracting physical disease	.546
The anxiety of not knowing when you might be shot at by Somalis	.502
Factor 2: Separation from family and friends	
Being separated from your family and friends in the US	.759
Not being sure how long you would be in Somalia	.759
Being in Somalia over the holidays	.718
Difficulties getting mail and phone calls through	.700
The lack of privacy or personal space	.568
Factor 3: General military pride	
Feeling that the American people were proud of you	.774
Feeling that you were representing the US to people from another country	.701
Feeling that your mission was successful	.686
Relationships with other soldiers	.671
Feeling that you were in Somalia for a good cause	.566
Factor 4: Exposure to starvation	
Seeing children starving and dying	.874
Seeing Somalis starving and dying	.869
Bringing food to people who were starving and dying	.671
Factor 5: Exposure to a new culture	
Having close contact with Somalis	.855
Dealing with Somali children	.784
Being able to visit a new country	.632
Factor 6: Restraint/changing rules	
Dealing with changing rules as to the discretionary use of force	.793
Having to exercise restraint while patrolling dangerous areas	.749

analysis with varimax rotation was conducted in order to determine the factor structure of the 30-item appraisal scale. Six factors with eigen values greater than 1.0 were derived from this analysis. These factors accounted for 58% of the variance. Three items with factor loadings of less than .50 were eliminated to maximize the internal consistency of the empirically derived subscales. The remaining 27 items were re-analyzed, and the same 6-factor solution emerged, which accounted for 60% of the variance.

The first factor accounted for 25% of the variance and appears to represent frustrations associated with the environment and people of Somalia. The nine items that load onto this scale consist of hostile, rejecting reactions from Somalis well as more environmental stressors such as risk of disease

and adverse climate. The second factor accounted for 16% of the variance and consists of five items that reflect the more general frustrations associated with being separated from loved ones and having diminished privacy and personal space as part of overseas military duty. The third factor accounted for 7% of the variance and is comprised of items reflecting general positive features associated with pride involved in serving as part of a military mission. The five items that load on this factor focus on pride and unit cohesion. The fourth factor, accounting for 6% of the variance, represents exposure to starving Somalis. The fifth factor accounted for 4% of the variance and is comprised of three items that characterize positive aspects of being exposed to a new culture. The final factor consists of two items which accounted for 4% of the variance. This factor refers to peacekeeping frustrations such as the need to exercise restraint in dangerous situations and dealing with constantly changing rules of engagement. The items and factor loadings greater than .50 are shown in Table 1.

The Somalia Survey also included a question asking participants whether or not they were involved in a psychological debriefing following their Somalia service. Although it was not a focus of the current project, as part of the larger Somalia study, troops were given the option of participating in a debriefing group. The debriefing group was introduced as an opportunity for soldiers to recognize and express thoughts and feelings about their recent deployment. A time-line approach was taken in which soldiers discussed the events they experienced in chronological order, beginning with when they first received orders to deploy, through the in-country experience, the return home, the reunion, and current experiences. Eight hundred and fifty four participants (29%) participated in a debriefing group.

Results

Exposure to Traditional War-Zone Stressors

Table 2 displays participants' mean scores on the five items comprising the traditional war-zone exposure scale. Included are the proportion of participants reporting that they experienced each potentially traumatizing event 13 or more times (the median of the scale). Greater than half of the sample reported going on patrols or having other very dangerous duty 13 or more times. Further, over one third of the sample reported that their unit was frequently fired upon, or frequently had rocks thrown at it.

Table 2. Mean Scores, and the Proportion of Participants Scoring 3 or Higher, on the Five Items Comprising the Traditional Combat Exposure Scale

	Mean (*SD*)	% Who Experienced the Event ≥13 Times
Patrols/dangerous duty	2.55 (1.18)	57%
Rocks thrown at unit	2.38 (1.14)	47%
Unit fired upon	2.00 (1.17)	34%
Police/manage Somalis in chaotic/unpredictable conditions	1.57 (1.21)	25%
Witnessed Somalis dying	1.06 (1.03)	10%

Rewarding and Frustrating Aspects of Peacekeeping

The mean scores and the percentage of participants scoring a mean of 3 or higher on each of the 6 factor scales of the Somalia Experiences Survey are presented in Table 3. Bonferroni-corrected paired *t*-tests for the 15 comparisons revealed that all factors were rated as significantly different ($p < .0033$) from one another, except for exposure to starving people and positive aspects of exposure to a new culture. A greater proportion of participants rated quite a bit of distress regarding general frustrations associated with both separation from family and friends and the need to exercise restraint as compared with frustrations associated with the country and inhabitants of Somalia and the stress of being exposed to starving people. Positive features of military service such as feeling of pride and cohesion with one's unit were rated as significantly more rewarding aspects of duty than exposure to a new culture.

Psychiatric Outcome

In order to obtain an estimate of the level of psychiatric symptomatology among participants in the study, the percentage of individuals meet-

Table 3. Mean Scores, and Percentage of Participants Scoring a Mean of 3 or Higher, on Each of the Six Factor Scales of the Somalia Experiences Survey

	Mean (*SD*)	% with a Mean of ≥3 on the Factor Scale
Frustration associated with overseas military duty	2.63_a (.94)	43
Frustration with peacekeeping	2.54_b (1.13)	49
Exposure to starvation	1.88_c (1.24)	26
Frustration associated with Somalis/Somalia	2.07_d (.88)	18
General military pride	2.24_e (.90)	25
Positive aspects of exposure to a new culture	1.89_c (1.11)	22

Note. Each item was rated on a scale from 0 to 4, with 3 = quite a bit rewarding or frustrating. Means not sharing a common subscript differ from one another at $p < .0033$.

Table 4. Number and Percentage of Participants Scoring a Standard Deviation Above the Normative Mean on Each Symptom Dimension of the Brief Symptom Inventory

Dimension	Frequency	*N*	%	Sample Mean (*SD*)	Non-Patient Norms[a] Mean (*SD*)
Somatization	16	3442	21	.33 (.60)	.29 (.40)
Obsessive-compulsive	880	3442	26	.55 (.80)	.43 (.48)
Interpersonal sensitivity	746	3442	22	.40 (.73)	.32 (.48)
Depression	1235	3446	36	.53 (.75)	.28 (.46)
Anxiety	854	3447	25	.44 (.66)	.35 (.45)
Hostility	1387	3447	40	.72 (.92)	.35 (.42)
Phobic anxiety	1089	3442	32	.27 (.56)	.17 (.36)
Paranoid ideation	1197	3441	35	.66 (.84)	.34 (.45)
Psychoticism	1307	3447	38	.47 (.72)	.15 (.30)

Note. N = 3,441–3,447.
[a]BSI raw score means and *SD*s from the non-patient normative sample (Derogatis & Spencer, 1982).

ing criteria for caseness on the BSI was computed using an operational definition demonstrated to have acceptable sensitivity and specificity (Derogatis & Spencer, 1982). The operational rule suggests that participants with a general severity index (GSI) *T*-score greater than or equal to 63, or any two primary dimension scores of greater than or equal to 63 can be designated a positive diagnosis or case. Of the 3,429 participants who had data available for these computations, 1,364 (40%) met criteria for caseness.

Data from the nine primary symptom dimensions were also examined to determine which symptom patterns may be problematic for participants. The number of participants scoring ≥1 *SD* above the mean (using norms derived from male and female non-patient data; Derogatis & Spencer, 1982) on each dimension are presented in Table 4. More than one-third of the sample endorsed significant symptomatology on the dimensions of hostility, psychoticism, depression, and paranoid ideation.

We also examined gender and racial differences in psychological distress. Because the Somalia mission involved policing African civilians, we were particularly interested in comparing Black versus nonBlack soldiers. Women were significantly more likely than men to score 1 *SD* above the mean or higher on scales of interpersonal sensitivity, 34% versus 22%, $\chi^2(1, N = 3{,}461) = 18.22, p < .001$, and psychoticism, 49% versus 39%, $\chi^2(1, N = 3{,}461) = 8.90, p < .01$, which most likely represent feelings of personal inadequacy and interpersonal alienation (Derogatis & Spencer, 1982). A greater proportion of African-Americans scored one or more standard deviations above the mean of the paranoid ideation scale, 40% versus 32%, $\chi^2(1, N = 3{,}461) = 22.61, p < .001$, which may reflect feelings of hostility and suspiciousness (Derogatis & Spencer, 1982).

Table 5. Semi-partial Correlations Between Exposure/Appraisal Predictor Variables and the Dimensions of the Brief Symptoms Inventory

Dimension	Combat	Frustration with Somalia	Separation from Family	Pride	Exposure to Starvation	Positive Culture	Negative Peacekeeping
Somatization	.12	.11	.03*	-.13	.04*	.01*	-.01*
Obsessive-compulsive	.11	.10	.08	-.14	.01*	.05*	.03*
Interpersonal sensitivity	.11	.11	.08	-.14	.01*	.06*	.01*
Depression	.11	.10	.07	-.16	.01*	.07	.02*
Anxiety	.15	.11	.04*	-.13	.01*	.03*	.05*
Hostility	.16	.03*	.10	-.15	-.03*	.03*	.07
Phobic anxiety	.13	.07	.05*	-.12	-.01*	.03*	.05*
Paranoid ideation	.13	.07	.09	-.18	.01*	.07	.06*
Psychoticism	.12	.10	.07	-.16	.01*	.08	.02*
Global Severity Index	.15	.10	.08	-.17	.01*	.06*	.04*

Note. All correlations except those indicated by an asterisk (*) are statistically significant of $p < .0006$.

Predictors of Impairment in Psychological Symptoms

Finally, we conducted a series of multiple linear regression analyses to examine the relative contribution of traditional war-zone exposure and positive and negative peacekeeper duty-related experiences in predicting psychological symptoms. Given that no a priori predictions were made regarding the specific relationship between each of the seven exposure/appraisal predictor variables and the subscales of the BSI, we examined all potential relationships. The dichotomous variable indicating whether or not the participant attended a debriefing group was also included in the regression to determine the impact of debriefing on current functioning. Ten separate analyses were conducted using a general index of psychiatric functioning from the BSI, global severity index (GSI), and the nine primary symptom subscales as dependent variables. In order to protect against type I error, we used a Bonferroni correction to test for significance, and thus a cutoff of $p < .0006$ (.05/80) was used to interpret the findings. The semi-partial correlations from these regression analyses are presented in Table 5.

The total variance accounted for by the equations ranged from 7 to 11%. Debriefing experience was not found to be a significant predictor in any equation. Exposure to traditional combat and military pride were significant predictors for all of the outcome measures. Frustration with Somalia and Somalis significantly accounted for unique variance in all the outcome measures except for hostility. Separation from family and exposure to a new culture added to the prediction of some dimensions, but did not seem to have an overall effect on functioning. Comparatively, exposure to starvation did not uniquely account for any of the variance in the psychiatric symptom dimensions, and negative peacekeeping was only associated with self-reported hostility.

Discussion

Our findings support the proposal that contemporary peacekeeping missions require soldiers to fulfill complex, multifaceted roles. Overall, our results confirm that although the military operation in Somalia was considered to be a humanitarian mission, a significant proportion of soldiers were exposed to significant, war-zone related stressors. In addition, there appear to be other negative, frustrating components of contemporary peacekeeping service. Nearly half of our sample reported "quite a bit" or "extreme" frustration over the need to exercise restraint during dangerous duty, and dealing with changing rules as to the discretionary use of force. Approximately one quarter of the sample found the physical stresses of

Somalia and negative interactions with Somalis significantly frustrating, perhaps underscoring the difficulty of serving in a humanitarian, peacekeeping mission in an ambiguous context. Interestingly, these stressors seemed to be more disturbing to participants than the actual witnessing of extreme starvation. Additionally, although not unique to peacekeeping, separation from family and friends, difficulty communicating with home, and experiencing a loss of privacy also negatively affected close to half of our participants.

Although there were also some rewarding or positive features of participating in the peacekeeping mission in Somalia, including military pride and exposure to a new culture, less than one-fourth of the sample rated these experiences as "quite a bit" or "extremely" rewarding. Further, within these rewarding components of the mission, positive aspects of exposure to a new culture, which captured items relating to the humanitarian nature of the mission, was rated significantly lower than general military pride. It appears that the potentially rewarding aspects of delivering relief may be overshadowed by the frustration and danger associated with a hostile peacekeeping action.

As predicted given the multi-dimensional stressors associated with their service, a substantial proportion of our sample members reported some post-mission psychiatric distress. Over one third of the participants endorsed enough symptomatology on the general symptom index of the BSI to be considered a psychiatric case. It is important to note that caseness as is defined on the BSI is only suggestive of a significant psychological problem. Typically, a designation of caseness is seen as an indication that the patient may require further assessment. Nonetheless, this finding underscores that further study of the psychological distress experienced by peacekeepers is indicated.

We found symptoms of hostility, psychoticism, depression, and paranoid ideation to be the most common psychiatric reactions to the peacekeeping mission in Somalia. Problems with anger management and hostility have consistently linked with exposure to war-zone-related stressors (e.g., Kulka et al., 1990), and they merit direct intervention as they can impede recovery from traumatic events (Foa, Riggs, Massie, & Yarczower, 1995). The elevated rate of hostility in this sample is not surprising given both the degree of life threat associated with the mission, the frustration associated with being rejected and threatened by Somalis, and the restricted rules of engagement. Depression is also a frequent reaction to exposure to traumatic events, and may be particularly common among peacekeepers due to disillusionment and demoralization associated with feeling one's mission was not successful or important (Henshaw, 1993). The elevations on the psychoticism and paranoid ideation scales were unex-

pected and somewhat surprising. It is unlikely that such a large proportion of this sample were experiencing classic psychotic symptoms. Closer examination of the items comprising each subscale (e.g., feeling that most people cannot be trusted; feeling lonely even when with people) suggests that the elevations on these scales within our sample may reflect interpersonal alienation (including disconnectedness and inability to trust) and hostility rather than classic psychotic symptoms (Derogatis & Spencer, 1982). Such interpersonal problems have been repeatedly linked to posttrauma reactions (e.g. Herman, 1992; McCann & Pearlman, 1990).

In our examination of the relative contribution of various rewarding and frustrating peacekeeping experiences on psychiatric functioning, similar findings emerged across the symptom dimensions. In general, exposure to traditional war-zone-related stressors was the strongest positive predictor of symptomatology, and general military pride and cohesion was the most powerful protective factor. In addition, "low magnitude stressors" such as being separated from family and not having privacy, were predictive of psychiatric distress, although the magnitude of the relationship was somewhat weaker. These findings parallel consistent findings in the study of the adaptation of Vietnam veterans (Kaylor, King, & King, 1987; Manning, 1991), indicating that similar factors are relevant to post-mission adjustment, even in these differing types of missions. Further, we have previously found subscales measuring similar constructs to be predictive of PTSD symptom severity among this sample of peacekeepers, suggesting that these stressors may be associated with risk for a range of psychiatric responses (Litz et al., 1997).

In addition to these common factors that likely predict psychiatric adjustment following a range of military missions, specific aspects of peacekeeping experiences also emerged as relevant to post-mission functioning. Frustration with Somalis and Somalia was a significant predictor of all symptom subscales except hostility. This subscale encompasses items that relate to "malevolent environment" such as disease and climate (King, King, Gudanowski, & Vreven, 1995) and several items measuring hostile reactions from Somalis. Research on PTSD has highlighted the impact of malevolent environment on subsequent functioning (King et al., 1995), but the impact of hostility of civilians has yet to be systematically explored in the field of military-related stress. This finding supports the claim that peacekeepers are at particular risk because of their close proximity to unappreciative, potentially hostile civilians. It is interesting that exposure to starving people did not emerge as relevant to postmission symptomatology, even though these events would be classified as potentially traumatizing (American Psychiatric Association, 1994). Further, although having to exercise restraint and dealing with changing rules of engagement was iden-

tified as a significant stressor by these participants, it only emerged as a significant predictor of symptoms of hostility. Thus, it seems that the unique, negative aspect of peacekeeping that is most relevant to psychiatric health is the hostile, rejecting reactions of those individuals peacekeepers have come to protect.

These findings highlight the mental health consequences that service in a peacekeeping mission may have for U.S. soldiers. However, there are several limitations to our study. First, and perhaps most importantly, in the absence of information of a participant's pre-deployment psychiatric functioning, it is impossible to definitively conclude that this level of distress is a direct consequence of peacekeeping duty. Relatedly, although significant relationships were revealed between several of the stressor scales and symptomatology, these are correlational in nature. We propose that the peacekeeping experience affects functioning, but it may be that the experience of psychiatric symptomatology impacts participants' ratings of stressful and rewarding events. Also, our findings are based upon self-report data and do not reflect formal diagnostic assessment. Finally, given that the regression equations only accounted for 7–11% of the variance, it is clear that other, unmeasured variables impact psychiatric symptomatology as well. Still, these data speak to the relevance of peacekeeping duty to mental health and indicate that further research is needed to better understand the protective and risk factors involved.

Acknowledgment

Portions of this paper were previously presented at the meeting of the International Society for Traumatic Stress Studies, Boston, Massachusetts, November, 1995.

References

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders*, (4th ed.). Washington D. C.: Author.

Derogatis, L. R., & Spencer, P. M. (1982). *Brief Symptom Inventory: Administration, scoring and procedures manual.* Minneapolis, MN: National Computer Systems, Inc.

Eyre, D. P., Segal, D. R., & Segal, M. W. (1993). The social construction of peacekeeping. In D. R. Segal & M. W. Segal (Eds.) *Peacekeepers and their wives: American participation in the multinational force and observers* (pp. 42-55). Westport, CT: Greenwood Press.

Foa, E. B., Riggs, D. S., Massie, E. D., & Yarczower M. (1995). The impact of fear activation and anger on the efficacy of exposure treatment for posttraumatic stress disorder. *Behavior Therapy, 26,* 487-499.

Harris, J. J., Rothberg, J. M., Segal, D. R., & Segal, M. W. (1993). Paratroopers in the desert. In D. R. Segal and M. W. Segal (Eds.) *Peacekeepers and their wives* (pp. 56-69). Westport, CT: Greenwood Press.

Henshaw, J. H. (1993). Forces for peacekeeping, peace enforcement, and humanitarian missions. In B. M. Belchman, W. J. Durch, D. R. Graham, J. H. Henshaw, P. L. Reed, V. A. Utgoff, & S. A. Wolfe (Eds.) *The American military in the 21st century* (pp. 397-430). New York: St. Martin's Press.

Herman, J. (1992). *Trauma and recovery*. New York: Basic Books.

Kardiner, A., & Spiegel, H. (1947). *War stress and neurotic illness*. New York: Harper.

Kaylor J. A., King, D. W., & King, L. A. (1987). Psychiatric effects of military service in Vietnam: A meta-analysis. *Psychiatric Bulletin, 102*, 257-271.

Keane, T. M., Fairbank, J. A., Caddell, J. M., Zimering, R. T., Taylor, K. L., & Mora, C. A. (1989). Clinical evaluation of a measure to assess combat exposure. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*, 53-55.

King, D. W., King, L. A., Gudanowski, D. M., Vreven, D. L. (1995). Alternative representations of war-zone stressors: Relationships to post-traumatic stress disorder in male and female Vietnam veterans. *Journal of Abnormal Psychology, 104*, 184-196.

Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L, Jordan, B. K., Marmar, C. R., & Weiss, D. S. (1990). *Trauma and the Vietnam War generation: Report of findings from the National Vietnam Veterans Readjustment Study*. New York: Brunner/Mazel.

Litz, B. T. (1996). The psychological demands of peacekeeping for military personnel. *National Center for PTSD Clinical Quarterly, 6*, 1-8.

Litz, B. T., Orsillo, S. M., Friedman, M. J., Ehlich, P. J., & Batres, A. (1997). An investigation of posttraumatic stress disorder associated with peacekeeping duty in Somalia for United States military personnel. *American Journal of Psychiatry, 154*, 178-184.

Lundin, T., & Otto, U. (1996). Swedish soldiers in peacekeeping operations: Stress reactions following missions in Congo, Lebanon, Cyprus, and Bosnia. *National Center for PTSD Clinical Quarterly, 6*, 9-11.

Manning, F. J. (1991). Morale, cohesion, and esprit de corps. In R. Gal, & A. D. Manglesdorff (Eds.) *Handbook of military psychology*. London: John Wiley & Sons.

McCann, I. L., & Pearlman, L. A. (1990) *Psychiatric trauma and the adult survivor: Theory, therapy, and transformation*. New York: Brunner/Mazel.

Mortensen, M. S. (1990, August). *The UN Peacekeeper—a new type of soldier*? Invited paper presented to the American Sociological Association Convention, Washington, DC.

United States Total Army Personnel Command (PERSCOM), Public Affairs Office (TAPC-PAO) (1994). *Demographics of US Army personnel, Somalia*. Alexandria, VA.